

IN THE CLAIMS:

1. (currently amended) A process of synthesis of a family of for synthesizing a microporous materials that are comprised under the name ITQ-16 material, with having an X-ray diffraction pattern like the one present in Table 1 that comprises with diffraction peaks at 2θ angles of 6.9° , 7.6° and 9.6° ~~and wherein the relative intensity of the peaks at 6.9° and 9.6° with respect to the intensity at the peak at 7.6° complies with the ratio $19.6^\circ/17.6^\circ$ being larger than zero and less than 1, characterized in that the synthesis is carried out using hydroxide anions as a mineralizing agent, without introducing fluorides as mineralizing agent, and in the presence of organic compounds such as structure directing agents comprising the steps of:~~

- a) providing a reaction mixture comprising a Si source, a Ge source, and an organic structure directing agent;
- b) adding a source of hydroxide to obtain an initial pH between 14 and 9; and
- c) heating the reaction mixture at a temperature between 80°C and 250°C .

2. (currently amended) A process of synthesis of a family of microporous materials according to claim 1, ~~characterized in that~~ wherein the organic cations structure directing agent is selected from the group comprised consisting of tetraalkylammonium organic cations of the tetraalkylammonium type with having a general formula $(R_1R_2R_3R_4N)^+$, wherein R_1 , R_2 , R_3 and R_4 may be alkyl or aromatic chains with 1 to 16 carbon atoms, ~~that may or may not form cycles on the nitrogen atoms, and organic polycations of~~ having a general formula $R_nN_x((CH_2)_n)_p$ wherein x varies is between 2 and 12, n refers to the number of carbon atoms that form some of the forming alkyl chains bridge between two contiguously nitrogen atoms and varies is between 1 and 6, p refers to number of alkyl chains bridge existing chain bridges between nitrogen atoms and varies is between 2 and 24, R represents alkyl or aryl groups bonded to a single nitrogen atom (N) containing between 1 and 12 carbon atoms and m varies is between 0 and 36 are used as structure directing agents.

3. (cancelled) ~~A process of synthesis of a family of microporous materials according to claim 1, characterized in that it comprises heating to a temperature between 80°C. and 250° C., at an initial pH comprised between 14 and 9, a reaction mixture that contains at least:~~

~~a SiO₂ source,~~

~~a GeO₂ source,~~

~~an organic cation and~~

~~H₂O.~~

4. (currently amended) A process of synthesis of a family of microporous materials according to claim 3 1, characterized in that wherein the reaction mixture is heated to a temperature between 130° C. and 175° C.

5. (currently amended) A process of synthesis of a family of microporous materials according to claim 3 1, characterized in that wherein the pH of the initial reaction mixture is between 13 and 10.

6. (currently amended) A process of synthesis of a family of microporous materials according to claim 3 1, characterized in that wherein the reaction mixture also contains a trivalent cation source.

7. (currently amended) A process of synthesis of a family of microporous materials according to claim 6, characterized in that wherein the trivalent cation is selected from among Al, B, Fe and Cr.

8. (currently amended) A process of synthesis of a family of microporous materials according to claim 3 1, characterized in that wherein the reaction mixture ~~also contains~~ further comprises a tetravalent cation source other than Si and Ge.

9. (currently amended) A process of synthesis of a family of microporous materials according to claim 8, characterized in that wherein the tetravalent cation is selected from among the group consisting of Ti, Sn and V.

10. (currently amended) A process of synthesis of a family of microporous materials according to claim 1, characterized in that wherein the organic cation structure directing agent is any one of the ones indicated selected from the group represented in FIG. 4.

11. (currently amended) A process of synthesis of a family of microporous materials according to claim 1, characterized in that wherein the organic cation used as a structure directing agent is BD^+ , and in that wherein the reaction mixture composition in terms of has molar ratios is within the following intervals:

$BD^+/(SiO_2+GeO_2)$ =between 3 and 0.01,

$H_2O/(SiO_2+GeO_2)$ =between 1000 and 0.5,

$GeO_3/(SiO_2+GeO_2)$, defined as g; =between 0.8 and 0.005.

12. (currently amended) A process of synthesis of a family of microporous materials according to claim 11, characterized in that wherein the molar ratio $BD^+/(SiO_2+GeO_2)$ is between 1 and 0.03.

13. (currently amended) A process of synthesis of a family of microporous materials according to claim 11, characterized in that wherein the molar ratio $H_2O/(SiO_2+GeO_2)$ is between 100 and 2.

14. (currently amended) A process of synthesis of a family of microporous materials according to claim 11, characterized in that wherein the molar ratio $GeO_2/(SiO_2+GeO_2)$ is between 0.5 and 0.032.

15. (currently amended) A process of synthesis of a family of microporous materials according to claim 11, characterized in that wherein the molar ratio GeO_2 , $(\text{SiO}_2 + \text{GeO}_2)$ is between 0.333 and 0.625.

16. (currently amended) A process of synthesis of a family of microporous materials according to claim 11, characterized in that wherein the reaction mixture also further comprises at least one trivalent element X such that and the molar ratio $(\text{Si} + \text{Ge})/\text{X}$ wherein X represents said element in a trivalent oxidation state, is comprised between at least 5 and ∞ .

17. (currently amended) A process of synthesis of a family of microporous materials according to claim 16, characterized in that wherein the molar ratio $(\text{Si} + \text{Ge})/\text{X}$ is larger than 15.

18. (currently amended) A process of synthesis of a family of microporous materials according to claim 16, characterized in that wherein the molar ratio $(\text{Si} + \text{Ge})/\text{X}$ is larger than 20.

19. (currently amended) A process of synthesis of a family of microporous materials according to claim 11, characterized in that wherein the reaction mixture also further comprises at least one tetravalent element, T, other than Ge and Si.

20. (currently amended) A process of synthesis of a family of microporous materials according to claim 19, characterized in that wherein the molar ratio $\text{SiO}_2 + \text{GeO}_2 / \text{TO}_2$ is between at least 10 and ∞ .

21. (currently amended) A process of synthesis of a family of microporous materials according to claim 19, characterized in that wherein the tetravalent element, T, is selected from among the group consisting of Ti, Sn and V.

22. (currently amended) A process of synthesis of a family of microporous materials according to claim 19, characterized in that wherein the molar ratio $\text{SiO}_2 + \text{GeO}_2 / \text{TO}_2$ in the reaction mixture is larger than 20.

23. (currently amended) A process of synthesis of a family of microporous materials according to claim 11, characterized in that wherein the reaction mixture also comprises an ~~alkaline~~ alkali metal or alkaline earth metal cation, M^{+n} .

24. (currently amended) A process of synthesis of a family of microporous materials according to claim 23, characterized in that wherein the ~~alkaline~~ alkali metal or alkaline earth metal cation is selected from among the group consisting of Na, Ba, K, Ca and Mg.

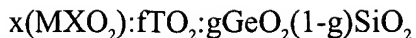
25. (currently amended) A process of synthesis of a family of microporous materials according to claim 23, characterized in that wherein the molar ratio $\text{M}^{+n} / \text{SiO}_2 + \text{GeO}_2$ is between less than 2 and 0.

26. (currently amended) A process of synthesis of a family of microporous materials according to claim 23, characterized in that wherein the molar ratio $\text{M}^{+n} / \text{SiO}_2 + \text{GeO}_2$ is between less than 1 and 0.

27. (currently amended) A process synthesis of a family of microporous materials according to claim 23, characterized in that wherein the molar ratio $\text{M}^{+2} / \text{SiO}_2 + \text{GeO}_2$ is between less than 0.5 and 0.

28. (currently amended) A process of synthesis of a family of microporous materials according to claim 3 1, characterized in that it also comprises a subsequent step of further comprising roasting at a temperature higher than 450°C.

29. (currently amended) A process of synthesis of a family of microporous materials according to claim 28, characterized in that wherein in the roasting step yields a roasted and anhydrous material of an empirical formula:



wherein

T represents at least one tetravalent element, T, other than Ge and Si,

X represents at least one element in a trivalent oxidation state,

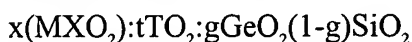
M represents at least one ~~alkaline~~ alkali metal or alkaline earth metal cation,

the molar ratio $\text{GeO}_2/(\text{SiO}_2+\text{GeO}_2)$, defined as g; is between 0.8 and 0.005,

the molar ratio $(\text{Si}+\text{Ge})/\text{X}$ is ~~between~~ at least 5 and 10, and

the molar ratio $\text{SiO}_2+\text{GeO}_2/\text{TO}_2$ is ~~between~~ at least 10 and 100.

30. (currently amended) ~~A Microporous~~ microporous material prepared according to the process of claim 29, ~~characterized in that~~ wherein in the roasted and anhydrous state it has the empirical formula:



wherein

T represents at least one tetravalent element, T, other than Ge and Si,

X represents at least one element in a trivalent oxidation state,

M represents at least one alkaline metal or alkaline earth metal cation,

the molar ratio $\text{GeO}_2/(\text{SiO}_2+\text{GeO}_2)$, defined as g; is between 0.8 and 0.005,

the molar ratio $(\text{Si}+\text{Ge})/\text{X}$ is ~~between~~ at least 5 and 10, and

the molar ratio $\text{SiO}_2+\text{GeO}_2/\text{TO}_2$ is ~~between~~ at least 10 and 100.

31. (cancelled)

32. (cancelled)

33. (cancelled)

34. (cancelled)

35. (cancelled)

36. (cancelled)

37. (cancelled)

38. (cancelled)

39. (new) A microporous material prepared by the process of claim 1.

40. (new) A microporous material prepared by the process of claim 21 wherein T is Sn.

41. (new) A microporous material prepared by the process of claim 21 wherein T is Ti.

42. (new) A method of cracking, hydrocracking or hydroisomerizing olefins comprising the step of providing a microporous material according to claim 39.

43. (new) A method of isomerizing, dewaxing or isodewaxing paraffins comprising the step of providing a microporous material according to claim 39.

44. (new) A method of alkylating olefins, alcohols, isoparaffins with olefins, or aromatics comprising the step of providing a microporous material according to claim 39.

45. (new) A method of performing an Oppenauer oxidation process comprising the step of providing a microporous material according to claim 39.

46. (new) A method of performing a Meerwein-Pondorf-Verley reduction process comprising the step of providing a microporous material according to claim 39.

47. (new) A method of amoxydating cyclohexanone comprising the step of providing a microporous material according to claim 39.

48. (new) A method of acylating substituted aromatic compounds using acids, acid chlorides or anhydrous chlorides of organic acids as acylating agents comprising the step of providing a microporous material according to claim 39.

49. (new) A method of alkylating according to claim 44 wherein the aromatic is benzene or propylene.

50. (new) A method of selectively oxidizing organic compounds using H_2O_2 , organic peroxides or hydroperoxides as oxidizing agents comprising the step of providing a microporous material according to claim 39.

51. (new) A method of performing a Bayer-Villiger oxidation process comprising the step of providing a microporous material according to claim 39.

52. (new) A method for epoxydation of olefins, oxidation of alkanes, oxidation of alcohols, and oxidation of thioethers to sulfoxides and sulfones comprising the step of providing a microporous material according to claim 39.

53. (new) A process for eliminating organic vapors comprising the step of providing a microporous material according to claim 39.